

5328us.ST25.txt
SEQUENCE LISTING

<110> Sobek, Harald
Frey, Bruno
Antranikian, Garabed
Boehlke, Kristina
Pisani, Francesca Maria
Rossi, Mose

<120> Mutant B-type DNA Polymerases Exhibiting Improved Performance in PCR

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<151> 2000-03-11

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5328us.ST25.txt

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5328us.ST25.txt

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Arg	Ile	Phe	Lys	Lys	Glu	Asn	Gly	Glu	Phe	Lys	Ile	Glu	Leu	Asp	Pro	
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cat	ttt	cag	ccc	tac	att	tac	gct	ctt	ctc	aaa	gat	gac	tcc	gct	att	144
His	Phe	Gln	Pro	Tyr	Ile	Tyr	Ala	Leu	Leu	Lys	Asp	Asp	Ser	Ala	Ile	
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Asp	Glu	Ile	Lys	Ala	Ile	Lys	Gly	Glu	Arg	His	Gly	Lys	Ile	Val	Arg	
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Glu	Val	Trp	Lys	Leu	Ile	Phe	Glu	His	Pro	Gln	Asp	Val	Pro	Ala	Leu	
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agg	ggc	aag	ata	agg	gaa	cat	cca	gct	gtg	att	gac	att	tat	gag	tac	336
Arg	Gly	Lys	Ile	Arg	Glu	His	Pro	Ala	Val	Ile	Asp	Ile	Tyr	Glu	Tyr	
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Asp	Ile	Pro	Phe	Ala	Lys	Arg	Tyr	Leu	Ile	Asp	Lys	Gly	Leu	Ile	Pro	
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Met	Glu	Gly	Asp	Glu	Glu	Leu	Lys	Leu	Met	Ala	Phe	Asp	Ile	Glu	Thr	
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Phe	Tyr	His	Glu	Gly	Asp	Glu	Phe	Gly	Lys	Gly	Glu	Ile	Ile	Met	Ile	
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Ser	Tyr	Ala	Asp	Glu	Glu	Glu	Ala	Arg	Val	Ile	Thr	Trp	Lys	Asn	Ile	
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gat	ctg	ccc	tac	gtt	gat	gtt	gta	tcc	aac	gaa	agg	gag	atg	ata	aag	576
Asp	Leu	Pro	Tyr	Val	Asp	Val	Val	Ser	Asn	Glu	Arg	Glu	Met	Ile	Lys	
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5328us.ST25.txt

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Tyr	Asn	Gly	Asp	Asn	Phe	Asp	Leu	Pro	Tyr	Leu	Ile	Lys	Arg	Ala	Glu		
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Pro	Lys	Ile	His	Arg	Met	Gly	Asp	Ser	Phe	Ala	Val	Glu	Ile	Lys	Gly		
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Pro	Thr	Tyr	Thr	Leu	Glu	Ala	Val	Tyr	Glu	Ala	Val	Leu	Gly	Lys	Thr		
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Lys	Ser	Lys	Leu	Gly	Ala	Glu	Glu	Ile	Ala	Ala	Ile	Trp	Glu	Thr	Glu		
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Asn	Leu	Val	Glu	Trp	Tyr	Leu	Leu	Arg	Val	Ala	Tyr	Glu	Arg	Asn	Glu		
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5328us.ST25.txt

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Val	Thr	His	Asn	Val	Ser	Pro	Asp	Thr	Leu	Glu	Arg	Glu	Gly	Cys	Lys	
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Asn	Tyr	Asp	Val	Ala	Pro	Ile	Val	Gly	Tyr	Lys	Phe	Cys	Lys	Asp	Phe	
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Pro	Gly	Phe	Ile	Pro	Ser	Ile	Leu	Gly	Glu	Leu	Ile	Thr	Met	Arg	Gln	
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Glu	Ile	Lys	Lys	Lys	Met	Lys	Ala	Thr	Ile	Asp	Pro	Ile	Glu	Lys	Lys	
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Met	Leu	Asp	Tyr	Arg	Gln	Arg	Ala	Val	Lys	Leu	His	Ala	Asn	Ser	Tyr	
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Tyr	Gly	Tyr	Met	Gly	Tyr	Pro	Lys	Ala	Arg	Trp	Tyr	Ser	Lys	Glu	Cys	
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Ala	Glu	Ser	Val	Thr	Ala	Trp	Gly	Arg	His	Tyr	Ile	Glu	Met	Thr	Ile	
		515					520					525				
aaa	gag	ata	gag	gag	aaa	ttt	gga	ttt	aag	gtg	cta	tat	gcc	gac	act	1632
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Asp	Gly	Phe	Tyr	Ala	Thr	Ile	Pro	Gly	Glu	Lys	Pro	Glu	Thr	Ile	Lys	
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5328us.ST25.txt

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Thr	Gln	Ala	Lys	Val	Leu	Glu	Ala	Ile	Leu	Lys	Glu	Asp	Ser	Val	Glu		
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Gln	Val	Pro	Leu	Glu	Lys	Leu	Val	Ile	His	Glu	Gln	Ile	Thr	Lys	Asp		
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Ile	Ser	Glu	Tyr	Lys	Ala	Ile	Gly	Pro	His	Val	Ala	Ile	Ala	Lys	Arg		
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Asp Glu Ile Lys Ala Ile Lys Gly Glu Arg His Gly Lys Ile Val Arg
50 55 60

Val Val Asp Ala Val Lys Val Lys Lys Lys Phe Leu Gly Arg Asp Val
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Glu Val Trp Lys Leu Ile Phe Glu His Pro Gln Asp Val Pro Ala Leu
85 90 95

Arg Gly Lys Ile Arg Glu His Pro Ala Val Ile Asp Ile Tyr Glu Tyr
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Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
115 120 125

Met Glu Gly Asp Glu Glu Leu Lys Leu Met Ala Phe Asp Ile Glu Thr
130 135 140

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 Ser Tyr Ala Asp Glu Glu Glu Ala Arg Val Ile Thr Trp Lys Asn Ile
 165 170 175
 Asp Leu Pro Tyr Val Asp Val Val Ser Asn Glu Arg Glu Met Ile Lys
 180 185 190
 Arg Phe Val Gln Ile Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
 195 200 205
 Tyr Asn Gly Asp Asn Phe Asp Leu Pro Tyr Leu Ile Lys Arg Ala Glu
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 Lys Leu Gly Val Thr Leu Leu Leu Gly Arg Asp Lys Glu His Pro Glu
 225 230 235 240
 Pro Lys Ile His Arg Met Gly Asp Ser Phe Ala Val Glu Ile Lys Gly
 245 250 255
 Arg Ile His Phe Asp Leu Phe Pro Val Val Arg Arg Thr Ile Asn Leu
 260 265 270
 Pro Thr Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Leu Gly Lys Thr
 275 280 285
 Lys Ser Lys Leu Gly Ala Glu Glu Ile Ala Ala Ile Trp Glu Thr Glu
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 Thr Tyr Glu Leu Gly Lys Glu Phe Phe Pro Met Glu Ala Glu Leu Ala
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 Lys Leu Ile Gly Gln Ser Val Trp Asp Val Ser Arg Ser Ser Thr Gly

340

345

350

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 370 375 380

Thr Thr Tyr Leu Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp
 385 390 395 400

Glu Asn Ile Thr Tyr Leu Asp Phe Arg Cys Leu Tyr Pro Ser Ile Ile
 405 410 415

Val Thr His Asn Val Ser Pro Asp Thr Leu Glu Arg Glu Gly Cys Lys
 420 425 430

Asn Tyr Asp Val Ala Pro Ile Val Gly Tyr Lys Phe Cys Lys Asp Phe
 435 440 445

Pro Gly Phe Ile Pro Ser Ile Leu Gly Glu Leu Ile Thr Met Arg Gln
 450 455 460

Glu Ile Lys Lys Lys Met Lys Ala Thr Ile Asp Pro Ile Glu Lys Lys
 465 470 475 480

Met Leu Asp Tyr Arg Gln Arg Ala Val Lys Leu His Ala Asn Ser Tyr
 485 490 495

Tyr Gly Tyr Met Gly Tyr Pro Lys Ala Arg Trp Tyr Ser Lys Glu Cys
 500 505 510

Ala Glu Ser Val Thr Ala Trp Gly Arg His Tyr Ile Glu Met Thr Ile
 515 520 525

Lys Glu Ile Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr

530

535

540

Asp Gly Phe Tyr Ala Thr Ile Pro Gly Glu Lys Pro Glu Thr Ile Lys
 545 550 555 560

Lys Lys Ala Lys Glu Phe Leu Lys Tyr Ile Asn Ser Lys Leu Pro Gly
 565 570 575

Leu Leu Glu Leu Glu Tyr Glu Gly Phe Tyr Leu Arg Gly Phe Phe Val
 580 585 590

Ala Lys Lys Arg Tyr Ala Val Ile Asp Glu Glu Gly Arg Ile Thr Thr
 595 600 605

Arg Gly Leu Glu Val Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu
 610 615 620

Thr Gln Ala Lys Val Leu Glu Ala Ile Leu Lys Glu Asp Ser Val Glu
 625 630 635 640

Lys Ala Val Glu Ile Val Lys Asp Val Val Glu Glu Ile Ala Lys Tyr
 645 650 655

Gln Val Pro Leu Glu Lys Leu Val Ile His Glu Gln Ile Thr Lys Asp
 660 665 670

Leu Ser Glu Tyr Lys Ala Ile Gly Pro His Val Ala Ile Ala Lys Arg
 675 680 685

Leu Ala Ala Lys Gly Ile Lys Val Arg Pro Gly Thr Ile Ile Ser Tyr
 690 695 700

Ile Val Leu Arg Gly Ser Gly Lys Ile Ser Asp Arg Val Ile Leu Leu
 705 710 715 720

Ser Glu Tyr Asp Pro Lys Lys His Lys Tyr Asp Pro Asp Tyr Tyr Ile

725

730

735

Glu Asn Gln Val Leu Pro Ala Val Leu Arg Ile Leu Glu Ala Phe Gly
740 745 750

Tyr Arg Lys Glu Asp Leu Lys Tyr Gln Ser Ser Lys Gln Val Gly Leu
755 760 765

Asp Ala Trp Leu Lys Lys
770